

A TAXONOMIC STUDY ON THE GENUS PROTACHERON OF ASCALAPHIDAE (NEUROPTERA, MYRMELONTOIDEA)

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Abstract *Protacheron* Weele is recorded from China for the first time. *Protacheron philippinensis* (Weele) is recorded for the first time from China. *P. guangxiensis* sp. nov. is described from China (Guangxi). The last two species are described and illustrated, and a key to the three species is given for their separation.

Key words Neuroptera, Ascalaphidae, newly recorded genus, new species, China.

Introduction

More than 450 species in 85 genera of the family Ascalaphidae have been reported in the world until 2005 and 10 genera and 32 species were reported from China. When examining the specimens of Ascalaphidae in the Insect Collection of China Agricultural University, we recognized the genus *Protacheron* Weele, 1908 is new to China. The genus includes two species: *Protacheron philippinensis* new record to China and *Protacheron guangxiensis* new to science. The genus *Protacheron* belongs to the tribe *Hybrisini* Weele, subfamily Ascalaphinae.

Materials and methods

Specimens were examined with stereomicroscope. The photos were taken with digital camera and dealt with Adobe Photoshop 7.0.

All the type specimens and other materials examined are deposited in the Insect Collection of China Agricultural University (CAU). The genital terms follow Tjeder, 1977.

Key to genera of tribe *Hybrisini* from China

- 1 Wing tip rounded, base of antennae denticulate internally in male *Protacheron*
Wing tip angular, base of antennae denticulate or not denticulate internally in male 2
- 2 Wing axillary angle sharp *Glyptobasis*
Wing axillary angle blunt 3
- 3 Base of antennae denticulate internally in male, ectoproct not prominent *Acheron*
Base of antennae not denticulate internally in male, ectoproct prominent, forcipiform *Ascalohybris*

Protacheron Weele, 1908 New record to China

Protacheron Weele, 1908: 225. Type-species: *Protacheron philippinensis* (Weele) 1908: 225.

Body length 23-27 mm, forewing 25-31 mm,

hindwing 21-27 mm. Sexual dimorphism present.

Head wider than thorax. Antennae hairless, at base pale yellow, clubbed apex pyriform. Antennae of female slightly shorter than that of male, just reaching or not reaching pterostigma of forewings. Eyes oval.

Legs slender. Coxa short with sparse hairs, spur of hind tibiae reaching middle of second tarsus.

Wings. Hyaline in male. Hindwings slightly wider than forewings. Pterostigma long with 7-8 crossveins of forewings, 5-6 crossveins of hindwings. Apical area beyond vein $Sc + R$ mostly with 3 rows of cells, occasionally with 2 rows. 7 or 8 presectoral crossveins in forewings, 4 or 5 presectoral crossveins in hindwings. End of M of forewings prominently constrictive. Forewings axillary angle very blunt, not projected. Outer margin of forewings at anal area in male sharp turning to wing base. Anal area of hindwings with a series of oblique veins longer than crossveins in Rs area.

Body hairs thin, dorsum with one yellow stripe from occiput to end of abdomen. Abdomen shorter than hindwings. Female abdomen slightly shorter than male. Male abdomen at base contract, 2nd segment swollen, from 3rd segment gradually becoming slender. Ectoprocts small, not prominent.

Distribution. Insulinde, Java, Celebes, Philippines, Himalaya, China (Guizhou, Guangxi, Hainan).

Key to species of *Protacheron*

- 1 Female with a shining golden-brown spot at base of wings *P. westermanni*
Female without spot at base of wings 2
- 2 Antennae pale brown, clubbed apex with yellowish brown rings, ectoproct long finger-like *P. guangxiensis* sp. nov.
Antennae dark brown, clubbed apex without rings, ectoproct plateform *P. philippinensis*

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Protacheron philippinensis (Weele) (Figs. 1-2, 4-7)

Protacheron philippinensis (Weele) Weele, 1908: 225.

Helicomitus philippinensis Weele, 1904: 206.

Description. Male (Fig. 1). Body length 26-27 mm, forewing 25-26 mm, hindwing 21-23 mm.

Head. Antennae length 18-20 mm, scape and pedicel pale yellow, flagellum dark brown, near clavate apex 5-6 segments with small projection. Around base of antennae with black and brownish yellow short hairs. Eyes brown. Vertex brown, with brown and black hairs. Frons, genae, clypeus, labrum, maxillary and labial palpi yellow, tip of mandible black. Occiput medially yellow, laterally dark brown. Frons centrally with long yellow hairs, laterally with dense black and yellow ones. Genae hairless. Labrum with short thin yellow hairs.

Thorax. Dorsum dark brown, centrally with longitudinal yellow stripe as broad as prescutum of mesonotum on the stripe with sparse yellow hairs. Pleura with grey brown long dense hairs. Ventral brown, with grey villus and sparse pale white hairs. Legs brownish yellow, femora with long white hairs, tibiae with black cilia, tarsi with black spinule. Spur and claw black.

Wings. Membrane hyaline. Veins brown, unicoloured. Outer margin of forewings at anal area in male sharp turning to wing base. Pterostigma in forewings long, dark brown, with 7-8 crossveins, narrow with 6-7 crossveins in hindwings.

Abdomen. Almost hairless. Venter dark brown, dorsum with broad yellow stripe centrally. 1st segment dorsally with a bundle of grey hairs laterally. Anterior margin of 2nd and 3rd dorsum with very short black hairs. Genitalia (Figs. 4, 6). Ectoprocts a pair of long convex plates, not fused, laterally with a lot of long black setae, end of ectoprocts with a finger-like protuberance, tip of protuberance with single very strong long seta. Gonarcus and parameres fused, hood-like, pelta absent. On each side of gonarcus with a rounded convex pulvinus, clothed with short dense black gonosetae.

Female (Fig. 2). Body length 25-26 mm, forewing 30-31 mm, hindwing 26-27 mm.

Wings. Forewings hyaline, hindwings with brownish spot between Sc + R and M at posterior margin or hyaline. Base of wings narrow, axillary angle of hindwings blunt. Abdomen slightly shorter than that of male. Genitalia (Figs. 5, 7). Ectoprocts not fused. A pair of distivalvae rounded convexity, with short black hairs. Interdens dark brown. A pair

of lingulla below 9th tergite finger-like. Ventrovalvae triangular.

Distribution. China, Philippines, Celebes, Java.

Material examined. 1 Guangxi Prov., 23 May 1984, 180 m, LI Fa-Sheng leg.; 1 Hainan Prov., 19 May 1963, height above sea level unknown, ZHOU Yao leg.; 1 Guangxi Prov., 26 May 1999, 550 m, LI Wen-Zhu leg.; 1 Guangxi Prov., 1984, person leg., and height above sea level unknown; 1 Guizhou Prov., 23 June 1981, 500 m, LI Fa-Sheng leg.; 1 Guangxi Prov., 27 May 1999, 300 m, YUAN De-Cheng leg.

Protacheron guangxiensis sp. nov. (Figs. 3, 8-9)

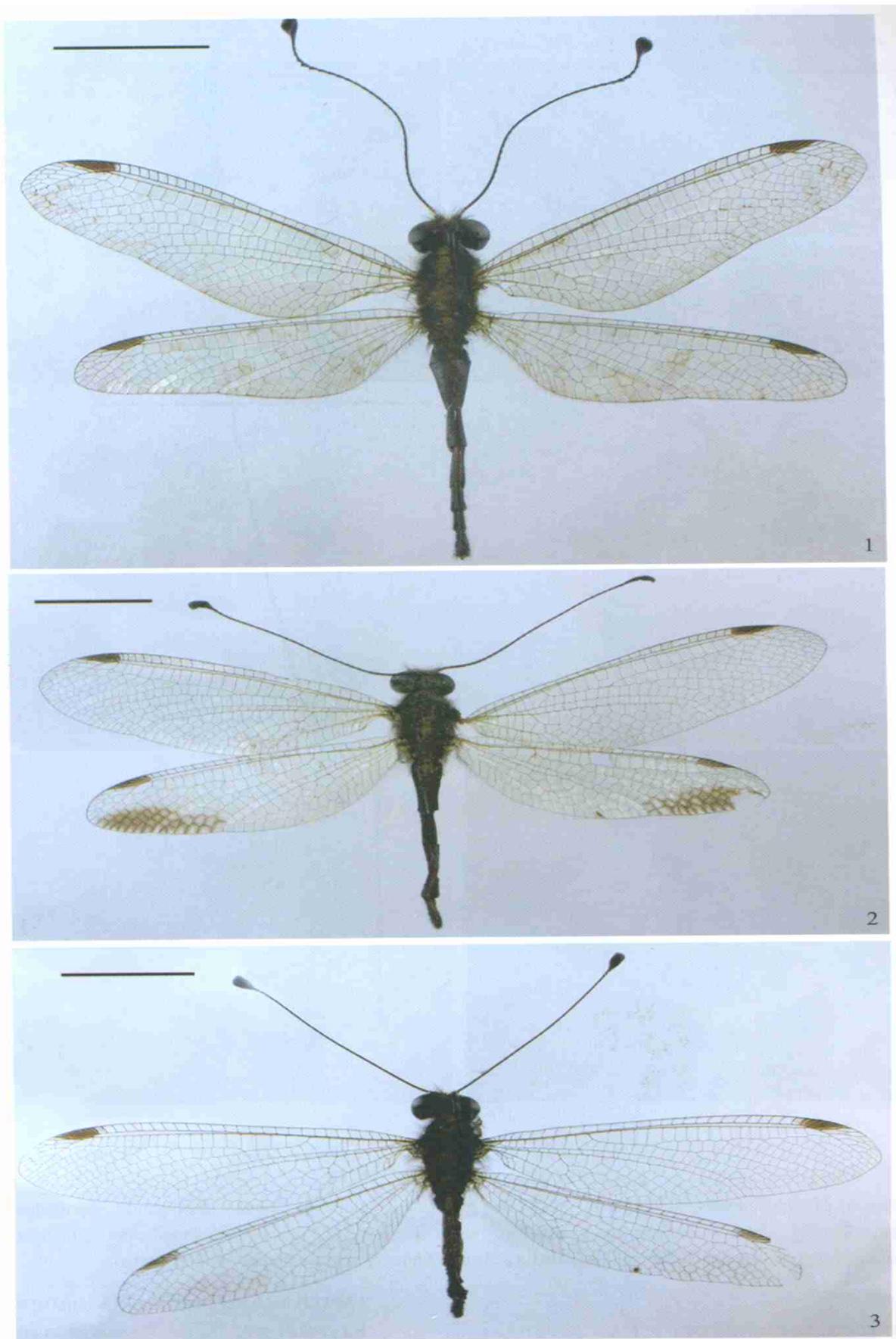
Description. Female (Fig. 3). Body length 23-26 mm, forewing 29-30 mm, hindwing 25-26 mm.

Head. Antennae not reaching pterostigma, scape and pedicel pale yellow, flagellum brown, without projection; clubbed apex pyriform, with yellowish brown rings, with black hairs. Brownish yellow and black short hairs around antennae. Eyes dark brown. Vertex brown with grey brown hairs. Frons, genae, clypeus, labrum, maxillary and labial palpi yellow, tip of mandibula black. Occiput medially pale yellow, laterally dark brown. Frons with yellowish brown hairs, centrally sparse and marginally dense long. Genae hairless. Labrum with short thin yellow hairs.

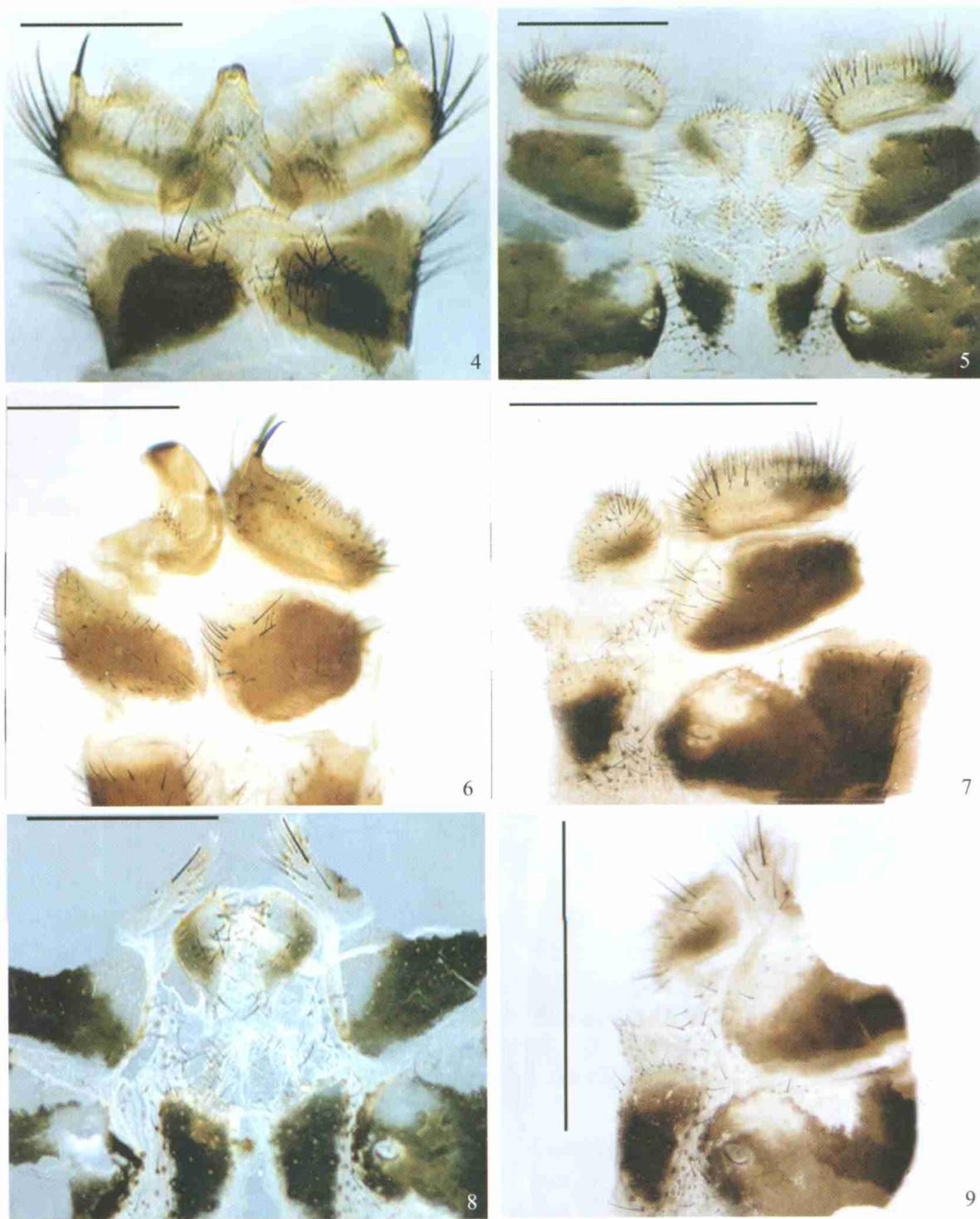
Thorax. Dorsum dark brown, with grey brown short hairs, centrally with broad longitudinal yellow stripes, bearing with sparse yellow hairs. Venter brown, with grey brown and white hairs. Pleura brown and base of wings with long grey hairs. Legs slender, brownish yellow, spur and claw black. Femora with long white hairs, tibiae with black cilia, tarsi with black spinule.

Wings. Hyaline or with much pale brown spot between Sc + R and M at posterior margin. Veins pale brown, unicoloured. Pterostigma pale brown, forewings long with 7 crossveins, hindwings narrow with 5-7 crossveins.

Abdomen. Length 15-16 mm, mostly hairless. First segment dorsally red brown with a bundle of grey hairs laterally, the second ventrally with very sparse short white hairs. Venter dark brown. Genitalia (Figs. 8-9): ectoprocts not fused, long finger-like. A pair of distivalvae rounded convexity, covered with short black hairs. Interdens brown. A pair of lingulla below 9th segment finger-like. Ventrovalvae triangular.



Figs. 1-2. *Protacheron philippinensis* (Weele). Fig. 3. *Protacheron guangxiensis* sp. nov. 1. Male. 2. Female. 3. Female. Scale bars: 1-3 = 1 cm.



Figs. 4-7. *Protacheron philippinensis* (Weele). 4. Male genitalia, ventral view. 5. Female genitalia, ventral view. 6. Male genitalia, lateral view. 7. Female genitalia, lateral view. Figs. 8-9. *Protacheron guangxiensis* sp. nov. 8. Female genitalia, ventral view. 9. Female genitalia, lateral view. Scale bars: 4-9 = 1 mm.

Male: unknown.

Material examined. Holotype, Guangxi Prov., 16 May 1984, 180 m, LI Fa-Sheng leg. Paratype, 1, Guangxi Prov., 17 May 1984, LU Xiao-Lin, WU Zheng-Liang leg.

Distribution. China (Guangxi).

Etymology. The specific name refers to the type locality, Guangxi.

This new species is similar to *Protacheron philippinensis*, but differs in the clubbed antenna with

yellowish brown rings and ectoprocts finger-like, not plate-like.

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蝶角蛉科(脉翅目, 蚁蛉总科)中国一新纪录属记述

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摘要 记述了中国蝶角蛉科1新纪录属原锯角蝶角蛉属 *Protacheron* Weele, 1908, 描述了1新纪录种 *Protacheron*

philippinensis 和1新种 *Protacheron guangxiensis* sp. nov.。标本保存在中国农业大学昆虫博物馆。

关键词 脉翅目, 蝶角蛉科, 新纪录属, 新种, 中国.

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